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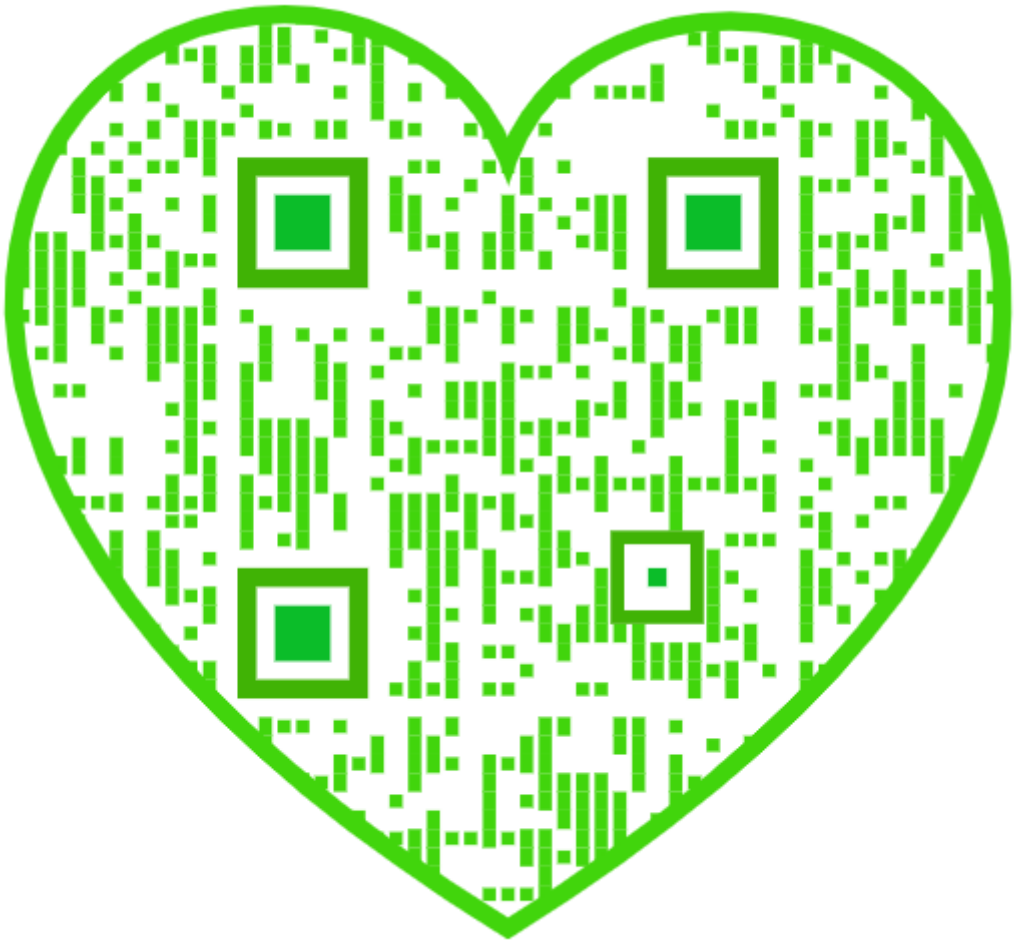

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THE FAMILY

STRAWBERRY PATCH

and the way to

MAKE IT A SUCCESS.

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STRAWBERRY CULTURE.

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Every one, fortunate enough to possess a garden, should have a portion of it devoted to the growing of strawberries.

The family strawberry patch should be considered the most important part of the garden. It will certainly confer the most benefit with its bounteous gift of large and luscious strawberries.

To grow strawberries successfully is not very difficult and does not require an expert gardener. Any person, possessed of ordinary intelligence, can grow the big, juicy, queen of fruits, who is not afraid of a little labor and will strictly follow a few simple rules, but these rules must be strictly followed. They are not many, neither are they difficult to learn and master.

It is the object of this little book to tell the amateur gardener how the absolute, yet simple, work should be performed to attain success.

This is not a scientific treatise, but is just merely a plain and simple statement of what a person must do in order to be successful

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with the little, but much desired garden strawberry patch.

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THE SOIL.

The first thing to be considered is the soil. Now, the strawberry is a hardy plant and it will grow and produce fruit on any reasonably fertile soil, but it does better on some soils than on others. The best is sandy loam.

A person can not always select the best soil. He has to use such as his garden provides. If it is heavy clay, it will have to be lightened by proper cultivation and the use of plenty of barnyard manure. If it is light sand, it must also have an abundance of barnyard manure to make the necessary humus and also to make the light, porous, sandy soil able to retain both the plant food and the moisture. It should also be compressed by rolling.

While strawberry plants will grow and produce fruit on almost any kind of soil, even among grass, yet the amount of fruit produced, and the quality, is not such as is

desired or profitable. To get the big, juicy, delicious fruits and abundance of them, the plants must have a fertile soil, well drained, and well cultivated, such as is generally termed intensive cultivation. It must be mellow and well mixed with the plant food that a strawberry plant needs to do its best.

A soil that is rich enough to raise a good crop of potatoes or other garden vegetables, will grow a big crop of strawberries. The ground should not be too rich, but considerable phosphorous and potash is necessary.

We will suppose that the piece of ground selected has been well manured and a crop of potatoes or other vegetables has been grown upon it and the weeds kept down. Now spread over that tract a layer of well rotted manure, cow manure preferred, to a depth of at least one inch, and scatter over it a fertilizer, containing nitrogen, phosphoric acid and potash, at the rate of 400 pounds to the acre.

A fertilizer having 3 per cent of nitrogen, 7 per cent of phosphoric acid, and 9 per cent of potash, will be about the right composi-

tion. A large per centage of nitrogen is not needed in strawberry fertilizers, as it would have the tendency to make the plants run more to foliage than fruit.

The next operation is to dig or plow the ground and give it several cultivations with a wheel hoe. If you do not have a wheel hoe, then use the garden rake and give the surface of the soil a good raking, so that there will be no lumps and the soil will be mellow and loose enough so the roots can easily push their passage through it.

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MOISTURE.

The strawberry plant requires plenty of moisture, yet its roots must not be in standing water. There must be sufficient drainage to remove all the surface water for several inches below the ground surface, generally termed standing water.

The moisture, that is in the subsoil, must be retained, so that the plants can have a reservoir of water to draw from as needed. The subsoil water can be largely retained by

making a dust mulch. The dust mulch is simply the ground surface that has been made very fine, to a depth of about two inches, with a rake or cultivator, and thus becomes loose and dry. It prevents what is termed capilliary attraction from drawing the storage water to the surface, from where it would be absorbed by the atmosphere and thus wasted.

To maintain the dust mulch, the ground must be raked or cultivated about once a week, and also as soon after a heavy rain as the ground will permit. A heavy rain makes a crust on the ground, and the capilliary attraction goes to work to draw the storage moisture to the surface. The ground must be loosened on the surface after a heavy rain, and if there has been no heavy rain, the raking or cultivating must be done about every seven days.

To preserve the storage water is one of the most important acts in growing strawberry plants.

Making a dust mulch also tends, to a great extent, in preventing weeds from growing,

for as the surface is loose and dry to a depth of about two inches, weed seed can not sprout for lack of any moisture. The dust mulch, therefore, does two very necessary acts---it prevents a waste of water and it prevents weeds from growing.

READY TO PLANT.

You are now ready to set out the strawberry plants. The ground has been thoroughly broken by the spade or plow. It has been frequently cultivated, and the soil is in a mellow condition, Sufficient manure and fertilizer has been spread over the patch and has been well mixed with the soil. Already the chemistry of nature has begun the important work of preparing the food for the plants, so that it will be in a good condition for the roots to feed upon. The light sandy parts have been rolled to compress the soil and prevent leaching. You have kept the ground surface well broken up, making a fine dust mulch, and have thus prevented the capilliary attraction from wasting the stored up water, There is not

a weed to be seen and the time has arrived to set out the young and thrifty plants.

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KIND OF PLANTS TO GET.

There is only one kind of the strawberry plants that should be used. They must be from thrifty parents and be free from disease.

Plants, taken from a bed that has born fruit, should not be used, because such are not vigorous and they will only cause failure and disappointment. The plants must come from parents that have born neither blossoms or fruit. The reason is that a strawberry plant can not produce blossoms and fruit and also produce strong and healthy plants. It has not sufficient strength to do so. It is one of the most important facts you must keep in mind, if you would be successful in growing big crops of fine berries, and you must not forget it.

You can get good, healthy, strawberry plants from any reliable nursery, but do not go far south of your own latitude. You can

also have a propogating bed and grow your own strawberry plants.

The kind of plants you use is one of the most important things in regard to being successful in growing big crops of large strawberries.

There are two distinct series of strawberry plants, but they can be distinguished only by their blossoms. One is the female, known as the pistolate, and the second is the male plant, known as the bi-sexial.

The female plant has only pistils in her blossoms. The male plant has both pistils and stamens or anthers.

The female plant is therefore unable to fertilize her blossoms with polen and has to depend on male plants for the necessary polen. Without the fertilizing polen the female plant might have a vigorous growth and abundance of blossoms, but would have very little fruit, and what she had would be of inferior quality. The male plant is able to fertilize its own blossoms.

Therefore, in making a bed of strawberry plants, you must not plant all female or

pistilate varieties. You must, without fail, plant both male and female, in rows parallel to each other, and not far distant,

In making your strawberry bed, it is a good plan to use both kinds, because the female plant does not have to use a great deal of her strength in producing polen, and can thus devote her whole strength to plant growth and fruiting, while the male plant will supply the necessary polen.

There are numerous kinds of strawberry plants, as regards the fruit. Some are early; some are medium, and others are late, and each grower will have to decide which is the best for his purpose. Some kinds do well on one kind of soil, and others flourish on other kinds of soil. Study the catalogues of the strawberry plant propagators, but do not believe all they claim for their plants.

If you know of any one who is growing strawberries successfully in your neighborhood, ascertain from him what kinds of plants do best in the region you live in.

If you are not able to get the necessary information, we would suggest that you

select an early kind of the male species, and set out one row, which ought not to be less than 25 feet in length, for a family strawberry patch. Then set two rows of Warfield, then a row of Dunlaps, after which you can set out a row or two of a late kind.

Some male plants have but little polen, while others have it in abundance. Be sure and get good, thrifty plants and be positive that they are not all of the female variety.

There is another thing to be considered. What kind of fruit do you prefer? Remember that you are going to grow strawberries for yourself and family. Some plants produce bright red berries; others are dark red and some are still different. Some berries are sweet; some slightly acid, and some are very acid in their taste. Which do you prefer? Decide that question before you order your plants. The propagator's catalogue will give you full information in regard to the color, taste, sex, and other information desired.

Do not deal with a strawberry plant grower unless you have every reason to believe

he is reliable. Pay him his price. Most of the prices, from reliable growers of strawberry plants, range from 25 cents to 75 cents for 25 plants. By 50 or 100 plant lots they are less per plant.

MARKING THE GROUND.

The next thing is to mark the ground so that the plants, when set out, will be in line two ways.

The rows for the garden patch should be 30 inches apart. For field culture the distance between the rows is greater, to permit of a horse being used to draw the cultivator.

In the row, the plants should be set at a distance of 18 inches from each other, for the garden patch, which, after the double hedge row has been made, will leave all the plants, including the four runner plants and their mother plant, at a distance of six inches from each other in each row.

The marking is done by a wheeled rig, or by a sort of sled, which, being drawn over the ground, leaves three or more marks on

the soil, the length of the plot, and distant from each other 30 inches, The marker is then arranged to mark at distances of 18 inches, and drawn at right angles to the 30 inch ones.

Where the marks cross each other is the place where the plants should be set. That method arranges your plants in straight lines both lengthways and crossways.

Several benefits are derived from setting the plants in straight lines. It is very much easier to cultivate them. You can also cross cultivate them until the new plants set, and it presents a pleasing and workmanlike appearance. Do not have crooked rows.

For marking the rows for your little garden strawberry patch, a much more simple plan can be used, Get a garden string and a stick 18 inches in length. Drive a stake at each end of the first row and stretch the string from one stake to the other. Set the plants right under the string and use the 18 inch stick to designate the distance the plants are to be set apart. Then move the stakes 30 inches, and thus continue until all

the rows of your little strawberry patch are planted.

TRIMMING THE PLANTS.

You are now ready to set out your strawberry plants. In the northern states the only time to set out strawberry plants is in the spring, just as soon as the ground can be got ready.

If the plants are set out in the fall, they will not have grown sufficient roots to enable them to winter in safety, therefore do not set out your plants in the fall. The spring is the only safe time to set out the plants in the northern states.

Your ground is ready, and it is in beautiful condition. The soil is mellow to a depth of eight inches. It has a fine surface, and is free from lumps. It has plenty of available food for the plants to feed upon, and below the surface there is a good storage of moisture.

The plants have arrived from a reliable grower, and they are in good condition, hav-

ing plenty of roots and being well protected with moss to keep them from drying up.

Now indelibly impress on your mind a very important fact regarding strawberry plants. You must not let the roots get dry, because, if the roots get dry, you might as well throw the plants away, for their chance of living is very slight. Therefore be exceedingly careful not to expose them to sunlight or to the wind.

Get a small basket, one that will hold about a peck. Place a damp newspaper in the bottom. Then put in the plants and cover with another dampened newspaper.

Before you take the plants to the garden patch, you must trim the plants and roots. Take a plant in your left hand, grasping it just below the crown. Notice how long the roots are. If you were to plant it in the shape it came from the nursery, you would not be able to set it in the ground, without having the roots bent or doubled. You can see that fact from the length and number of the roots of the thoroughbred plant in your hand. It must be trimmed.

With a pair of shears cut off all the old

runners and dead leaves and all the live ones except just one. Let the leaf, you leave on the plant, be the best one. Now cut off all the roots about an inch below your hand, and the plant is then ready to be set in the ground. The trimming must be done under cover. On no account do it out doors, for fear of drying the roots.

There are two good reasons for trimming off the ends of the roots. First, it permits the planting of the strawberry plant without having any of the roots doubled up. Second, it permits the cut ends to callous and throw out numerous laterals or feeders. In other words trimming the roots causes the plant to grow more feeding roots.

For setting out strawberry plants, there is nothing better than the strawberry dibble. There are various kinds of dibbles, but the strawberry dibble is made of steel, ten inches long and four inches wide, without including the handle, and weighs nearly two pounds. The bevel at the lower end is ground sharp. It retails at 35 cents.

The use of the dibble permits you to set

the plant without withdrawing it. It prevents the dirt from falling back into the hole you have just made. It does not allow the soil to dry and it makes a sufficiently large hole to allow the plant to be easily and properly set in its place.

If you can not get a dibble, use a spade, or make one out of a piece of maple board. The wooden one can be used where the ground is not heavy clay or stony.

Take the dibble in your right hand and stick it straight down into the soil, just in front of you, to the depth of the blade. It is easily done, as it has a sharp point and edges. Then press the dibble from you and make a "V" shaped hole, which will be about four inches wide at the top. Keep the dibble pressed against the dirt to keep it from falling into and filling up the hole. Now, with your left hand, get a plant from the covered basket. Give it a slight shake, to straighten the roots, and place it in the hole made by the dibble. Spread the roots out fan shape, and let them rest against the side of the hole nearest you. The crown of

the plant must be just above the surface of the ground. Now remove the dibble and the dirt will fall against the roots, just set. Then press the dirt so that it will be firm against the roots.

The packing of the dirt against the roots is very important, as it gives the roots a better chance to commence feeding, and also improves their ability to get moisture.

One good way to pack the soil about the roots is to place your feet, one on each side of the plant, and your weight will be sufficient to pack the soil.

The crown must not be buried, neither must the roots show above the surface.

Roots exposed to the sun and wind dry and the result is death to the plant or it is permanently damaged. Put all the other plants in the same way and 18 inches apart.

Bending down is not the easiest kind of work for a grown person, and you will find it to your advantage to attach a cap to your knee, of some waterproof material, and then when you are ready to use the dibble, drop on one knee.

When the row is finished you can change labor by taking a rake and smoothing the ground along the row last planted, removing all signs of your feet marks, and leaving the surface in good condition to form a dust mulch. Now go on and do the remainder of the rows in the same way.

When the planting is finished, and it will not take you very long to set all the plants in your little patch, you can then view the scene with pleasure and satisfaction, knowing that you have done good work.

You have prepared the ground properly. It is mellow and has plenty of plant food and moisture. You have planted first class thoroughbred plants, free from disease or plant weakness. There are no weeds to be seen, and the surface has been raked fine, forming a dust mulch, which prevents capilliary attraction from exhausting the under surface of moisture. Along the various rows, at intervals of 18 inches, you can see the tiny green leaves of the plants.

There is now no more work to be done, for at least a week, unless a heavy rain comes

and makes a hard crust on the ground surface. That crust must be broken as soon as you can---that is, when the ground has dried sufficiently to permit the rake or the wheel hand cultivator to loosen the crust and restore the dust mulch. The crust breaking must not be done when the ground is muddy.

ONLY ONE LEAF.

Why are all the leaves cut off except one? Why not leave all the foliage on the plant when it was set in the ground?

The reason for cutting off all the leaves, except one, is that the young plant will have to be in the ground for some time before its roots are able to take plant food and moisture from the soil, and during that time the plant has to feed upon itself.

The plant must have a leaf in order to live, because leaves are as necessary as are the roots, but the more leaves, the more substance required from the roots, and therefore it is necessary to remove all the leaves

except those that are actually needed for the plant's existence. One leaf will do the work required, but the plant must have one.

REMOVE THE BUDS.

Sometime after planting, you will notice that the new plants have produced fruit buds and many of them. They must be removed. This is very important, for on the removal of the buds depends the success of your plants. It must not be neglected.

Why remove the buds from the plants?

Because the young plants have not sufficient roots and foliage to properly sustain the plant, grow runners, and also produce blossoms, polen and fruit.

The plants have been in the ground but a short time, and what roots they have are needed exclusively to maintain a vigorous growth of the plant. To increase its burden, by adding the exhausting work of producing blossoms and fruit, is making it do more than it is able to do, and the result is the

same as if you were to make a child do a man's labor.

The plant would be so exhausted by its double labor that it would be permanently disabled. The final result would be that it would not produce a good crop of fruit and it would produce weak offsprings,

The entire work of roots and leaves must be devoted, the first year, to making a strong and vigorous mother plant and her runners. Therefore do not fail to remove the buds. Do so before the buds develop into blossoms

The buds can be easily removed by pinching them off with the thumb and forefinger, or a pair of sheers can be used. The first plan is the best, and you can do the work in your little patch in a few minutes. You can not get all the buds the first time going over the patch, and you must afterwards keep close watch and when you see a bunch of the fruit buds, or a blossom, be sure and remove them.

The plants must have the exclusive use of the ground, and their progress must not be hindered by weeds, buds, blossoms or fruit.

If you are anxious to see what kind of fruit your plants will bare, you can leave a few blossoms on two or three plants.

ARRANGING THE RUNNERS.

The next important operation is attending to the new runners,

You are going to form what is termed the double hedge row, because that is the best way to grow strawberry plants, in order to get big crops of juicy berries.

The double edge row system of laying the new plants, consists in allowing the mother plant to produce but four runners, or new plants, and all the rest are considered the same as weeds and cut off.

A double edge row would look as follows when completed:

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1   2     1   2     1   2
  M           M         M
3   4     3   4     3   4
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The letter "M" represents the mother plants and the figures 1, 2, 3, 4, the four

new plants. You have now three rows, instead of one, and each will be about six inches apart.

The plants, you set out in the spring, are called the mother plants, and their offsprings are the runners or new plants. They are to be arranged so that each plant will be about six inches from the mother plant, and the same distance from each other. That distance apart gives each plant sufficient room and plenty of territory to draw nourishment and moisture from. It also allows plenty of sunlight to get to the plants and fruit, and yet the plants, if in proper condition, will furnish sufficient shade for the fruit.

If the plants are allowed to run at random and fill up the space, there will be such a great demand on the soil for nourishment and moisture, that they can not be furnished, and the result will be a lot of small and undesirable berries.

Some of the runners are long and some are short, and thus you will have to place the new plants where you want them, and not let the runners set at random.

The little plant, at the end of a runner, is called a node, and you will frequently find that it has difficulty in getting its roots into the ground, especially if dry weather and cultivation has made the surface dry. In that case, place the young plant where you want it, and then place a little dirt on the runner, just back of the node, to hold it down. That mode of anchoring it will keep the wind from blowing it away from the spot selected for its home, and will also help it to get its roots into the ground.

If it should happen that some of the mother plants have died, or been killed by insects, then let the new plant send out its runner and thus fill up the gap.

After a new plant has got its roots firmly fixed in the ground, it does not need any more assistance from the mother plant, and the stem, that connects the two, can be cut without doing any injury.

It is not absolutely necessary to cut the stem and separate the mother from her offspring, but by doing so, you will find it much more easier to work the pointed hoe be-

tween the plants, as the runners, if not cut, would catch the hoe and prevent thorough work.

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PROPAGATING BED.

If you desire to grow your own plants, for setting out the next spring, do not remove any of the new runner plants at the ends of the row, for a distance of three or five feet, according as to the number of plants you will want. Let both the mother plants and the new plants make all the runners they can, and when they are through, the space between the rows will be almost covered with plants.

From that mass of plants you can dig what you need the next year.

That part of the strawberry patch would be the propagating bed or nursery.

During the latter part of the autumn, you should cease the work of cultivating, for this reason: Cultivating the ground permits the air to enter, and it causes the chemical

agents of nature to work vigorously, with the result of increasing the plant growth. Now, by that time, your intensive mode of cultivation has caused a satisfactory growth of the plants, and what you want now is to have the plants produce plenty of crowns.

The crowns are produced in the fall, and they can be greatly assisted by delaying the plant growth. It is best done by ceasing cultivation.

You have done such good work during the summer, that the weeds have been kept out of the patch, and there is very little chance for the weeds to grow so late in the year. Therefore you can safely cease battling against the weeds until next spring.

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MULCHING.

As soon as the ground is frozen, you must cover the entire patch with straw, which is the best thing you can use for a protector. If you can not get straw, get marsh hay, but keep in mind the plants must be covered.

The straw should be about two inches thick all over the patch.

Freezing alone does not injure the plants. It is the frequent thawing and freezing in the spring that does the injury. The thawing and freezing raises the plants out of the ground and breaks the roots, resulting in the destruction or injury to the plants.

Even if they survive, they will be of very little benefit to you as fruit producers, and that is what you have labored so hard for, plenty of big juicy berries.

There are two other good reasons for covering the ground wth straw. It serves as a mulch to keep down the weeds and preserve the stored moisture, and it has a tendency to keep the ground frozen until the changeable weather in the spring is over.

If the reasons stated did not exist, you would still have to cover the ground with straw. If you had no straw on the ground, every rain, during the fruiting time, would splash mud over the berries. and you would not like to eat strawberries seasoned with sand and mud. Therefore the ground must

be covered with straw at berry picking time, so the fruit will be clean. It is very important and must not be neglected.

In the patch that is well mulched with straw, you can go to it right after a heavy rain and pick berries free from dirt. Bare in mind that it is not the proper thing to pick berries when they are wet, unless you desire a few for immediate use.

You can not ship wet berries without having them spoiled.

Now be sure and cover your entire strawberry patch with, at the least, two inches of straw, as soon as the ground is frozen.

It will not do to cover the plants until the ground is frozen, as it would injure them, and be liable to smother them. Wait until winter has put the plants to sleep before you spread their bed clothes on.

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REMOVING THE MULCH.

When spring comes and the frosts are out of the ground, just take a look at your strawberry plants, and if you see them

sending out above the surface their green leaves, you will know the time for action has again arrived.

You must then remove the straw from above the plants, so they can see daylight, but do not remove any of the straw from between the rows. This is very important, because the plants can not be expected to thrive when covered with straw. Besides the danger of smothering the plants, when beneath a heavy covering, it is necessary to remove the covering to make them hardy and not get bleached.

The straw can be removed from off the plants with a rake or a fork, but use them with great care, so as not to pull up any of the plants. The ground being soft, at that season of the year, it is easy to pull out a plant.

Do not walk up and down the rows any more than is actually necessary, because walking on the moist ground will pack it hard.

If you wish to loosen the ground, after the plants have got a good growth, and the soil

is somewhat dried, you can move the straw from the center of the rows and pile it against the plants. Then run the cultivator up the center of the row, but do not go close to the plants, for fear of cutting roots, and then replace the straw back to its place.

That will not only loosen and mellow the ground but will admit the air to set the chemical agents to work more vigorously.

In the spring you will set out your second bed, the same way as you did the first, and then there is but little to do until the time comes to gather the fruit, except to remove any weeds that may show themselves.

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THE WORK YOU HAVE DONE.

While you are waiting patiently and eagerly for the ripening of the big, juicy berries, you naturally look back, mentally, over the past year and review your labor.

You first enriched the soil by covering it with stable manure to the depth of at least

one inch, and you furnished an admirable assistant in the shape of fertilizer at the rate of 400 pounds to the acre, containing three per cent of nitrogen, seven per cent of phosporic acid, and nine per cent of potassium.

You did not need a large per cent of nitrogen, because the strawberry plant does not require as much mere plant as do many kinds of vegetables, but it does require considerable phosphoric acid and potash to produce fine, large and well colored berries.

You then procured first class thoroughbred plants, that you knew were free from any disease and came from strong, healthy and vigorous mother plants, because you obtained them from a reliable grower. You were careful not to set out plants that were taken from fruit bearing beds and were thus of a weak nature.

You trimmed the plants properly, set them in the ground correctly, and then laid them so that the roots were not doubled or bent, and that the mellow and well cultivated soil was firmly pressed against them.

You picked off all the fruit buds, so that

the entire growth should go towards the building up of vigorous plants, and you did not weaken them by making them do more work than they were able to do in their infancy,

You kept down the weeds, so that the plants would not have to share the supply of nutriment and moisture with thieving and unwelcome grafters, and your strawberry plants had the entire resources of the ground in their vicinity, to themselves and for their sole use.

You maintained a dust mulch, and thus kept your pets from suffering from thirst during the droughts of summer and fall.

You arranged the runners in double edge row and saw that the plants were at least six inches from each other, and then cut off the surplus runners.

When the ground was frozen, you covered the entire patch about two inches deep with nice wheat straw, and in the spring you removed such straw as was directly above the plants, so they would not get bleached, injured or weakened.

The last thing you did was to loosen the soil and remove what few weeds appeared, and it does your eyes good to gaze on the large, well developed, healthy plants, with their loads of green berries, some of which are beginning to show a beautiful red color, a sure sign that the much longed for time is near at hand when you can have a royal feast of the queen of fruits.

Yes, you have faithfully done your part of the contract and the strawberry plants are now sure to do their part.

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PICKING THE FRUIT.

And now the time has arrived when you are to be well rewarded for your care, labor and expense.

The berries have begun to ripen, and the big, red, juicy fruits are nestling amid the dark green leaves, making a pretty picture, and bringing to your mind visions of strawberries and cream and the big and delicious strawberry shortcake.

The berries must be picked properly. You do not want a lot of bruised and mashed berries on your table. In picking them do not squeeze the fruit, because a little press of the fingers will bruise them; they are so juicy.

Take hold of the stem, about half an inch from the berry, and with your thumb and fore finger nails cut off the stem. It is very easily done, and you will soon learn the knack of picking the fruit in the right way. Be careful and do not injure the stem of the bunch, or you will spoil all the berries on it.

To hold the fruit, when picked, you should buy or make a carrying tray. It will hold four one quart baskets, and is easy to carry about the patch. In one box place the very large ones---the giants of their species, to be used as presents to particular friends and for swell occasions at your own table. In two other baskets place all the rest of the good strawberries. and in the fourth basket put the few small ones and those that are only partly developed, for there will be a few of the pistilate kind that have not been

fertilized by polen from the male plants, and are imperfect.

As you planted very early, medium early, late, and very late species of plants, your strawberry season will last for at least 20 days, and during that time you can pick many quarts of the big, juicy berries every day.

For nearly a month your table will be supplied with the choicest fruit that grows on the earth, and what will give you added pleasure, is the knowledge that it is the result of your own labor. You do not now have any regrets for the labor and money expended.

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SPECIES DIFFER.

You will also find considerable difference among the various kinds, in regard to the way they produce fruit. Some have long and firm stems, that hold the bunches of berries well above the ground. Some have weak stems and their fruit lays on the straw. Others will have their berries well

scattered among the leaves and cunningly hidden amid the foliage. Before you lies a big bunch of berries. Lift it gently, so as not to break the stem, and often you will be surprised to find underneath, where they were hidden from sight, several big, juicy berries.

While you are picking your berries, keep a close watch on the many green bunches, and if there is no straw under them, gently raise them and place straw under. You will save lots of big berries by so doing. The big berries are too delicious to be spoiled by neglect.

If a berry touches the ground it will be spoiled.

You will also find you have assistants in picking the fruit. Frequently you will find a berry that has had a gap eaten into it, showing the rich, creamy and tempting inside. Some were done by birds and others by insects, but the loss is not very extensive. The birds and insects know which are the ripest and best berries. They are good judges of a fine strawberry.

PREPARING THE SECOND CROP.

The strawberry fruit season being over, and a very pleasant and profitable time it has been for over three weeks, it is now time to prepare the bed for the second crop.

The first thing to be done is to cut off all the strawberry plant tops, just above the crowns. You can do it with a scythe or a hand grass cutter or sickle.

When it is possible to do so, you let the cut off tops lay on the ground until they are dry and then, when there is a brisk wind in the right direction, you set fire to them and burn them up. In doing so you destroy a great many insects, besides laying a coat of ashes on the ground and destroying a lot of rubbish, consisting of the old straw mulching and the cut off strawberry tops.

The firing must be done when the wind is blowing freshly, so that the flames can pass quickly over the berry patch and thus do no damage to the plants. A slow fire would be apt to injure the crowns of the plants.

In your lot, if the strawberry patch is close to the house or any building, it would

be exceedingly dangerous to fire the mulch and dry out cut off plants, so you will have to adopt a different plan. You must rake up the mulch and dry plants into heaps and then remove them to a safe place to burn, and if it is impossible to burn them safely, then make a pile of them and let them rot. It is best to destroy the cut off plants, because if the leaves are infected, the burning will remove all danger of the disease spreading to your newly set out plants as well as the old ones.

The next operation is to dig up the ground between the rows to within a few inches of the plants. In doing so you will cut off many of the old roots, but that will cause no damage, as they are of but very little use.

If you would examine the roots of the old plants, you would see that they are black and wirey. while those of new plants are whiteish.

It is necessary to cover the crowns to cause the old plants to grow new runners.

Now take a rake and pull the dirt from the center of the rows and cover the crowns

of the plants about an inch deep with dirt. The object of covering the crowns with dirt is to make the crowns throw out new roots, and it is the only way it can be done.

Taking the dirt from the center of the rows will leave a slight hollow in the center of the row. It gives you a good chance to place manure, not only filling the depression, but furnishing more plant food, for the the rains will leach the fertilizing matter from the manure and send it to the roots in available shape for the new roots to feed on and thrive luxurantly.

All you have to do now, until fall, is to cultivate and keep the weeds down. After the plants are well above the ground, you must thin them where ever necessary. In thinning, remove the weakest plants. When the ground is frozen, you must again cover the plants with straw.

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BEST WAY FOR A SMALL PATCH

In most gardens the ground is limited in size, and it may not be possible for you to

spare three tracts for the use of the strawberry plants. In that case, do not try to raise a second crop, but destroy the plants as soon as the first crop of strawberries are gathered.

Of course you will plant a new bed each year, and you will thus have two beds, one merely of new plants, from which the buds are to be removed, and the other patch will be your one year old fruit bearing bed.

With the one crop system of strawberry culture, you do not have to go to the labor of covering the crowns, or covering the plants with straw, and there is no danger from the winter, besides the second crop of berries is not so large or as fine as the first one.

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NO THREE CROPS.

No attempt should be made to raise three crops successively from the same strawberry bed. After the second crop has been picked dig or plow under the plants.

Strawberry plants have not vigor enough to grow three large crops of fine berries.

The one year system of strawberry plant culture would not do for field culture, as the expense of setting out new plants, for one year's fruiting, on an acre or more, would be too great to be profitable, and consequently, if engaged in strawberry culture, on a large scale, a second crop must be obtained, for financial reasons only.

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MISCELLANEOUS MATTERS.

It will sometimes occur that you have not been able to get your ground ready at the time your plants arrived from the nursery, owing to rains or a delayed and unexpected addition of winter. In that case you must heel the plants.

Heeling the plants consists in digging a "V" shaped trench, the depth of which is about eight inches. Then take the plants that came from the nursery, remove them from the package and lay them along one side of the trench, being very careful to see that the roots of every plant lays against the dirt and are straightened out. Then

bring the dirt back again so that the roots are covered and only the crowns and leaves show above the ground. Press the dirt firmly against the roots.

The plants can remain in the trench for several days without injury.

If you have a propagating bed, you do not need to heel the plants, as you can dig them up when they are wanted.

There is one thing you must not forget. The plants should be set in the ground before they have begun to get a vigorous growth. They should be planted while somewhat dormant, because if they get well advanced and are then dug up, it will cause a delay in growing when set in their new bed, as some of their resources will have been expended in unnecessary growth. By planting them while they are dormant, you get the entire strength of the plant. The plants you dig up will, of course, show one or more leaves, but not very large.

Do not set out a plant in your new bed unless it has one healthy looking new leaf. Throw away those that show no life.

A good healthy bearing strawberry plant ought to produce one quart of strawberries each season.

To cover an acre of strawberry plants will require about three tons of straw.

Senator Dunlap and Pride of Michigan are good plants to use, if the hill system is followed. They are vigorous plants.

An acre of strawberry plants ought to bring the grower from $300 to $500 worth of fruit, from which expenses are to be deducted.

A wagon load of manure will weigh about one ton, if there is much straw mixed with it, and if free from straw it will weigh one and a half tons. About 15 wagon loads of manure are required to properly fertilize an acre of strawberry plants.

There are two other systems of growing strawberries, besides the double hedge one. One is the hill plan, and the other is the single hedge style.

The hill system consists in cutting off all the runners that the mother plant throws out. It causes the mother plant to develop

a large plant growth and an increase in the number of crowns. By the single hedge row system you will get large berries, but not as numerous as by the double hedge row plan,

The plants to set for the single hedge row are those that naturally have a large foliage, such as the Pride of Michigan, Donan, Dunlap, and others.

The double edge system is the best. If one plant in the hill or single hedge row is killed, it leaves a large gap, while the loss of a single plant in the double edge row is hardly noticed.

The single row system consists in allowing the mother plant to throw out only two runners and one is set on each side of the mother plant, about six inches distant and in line, so that the entire row would be but a single plant wide.

The double row system, when rightfully completed, makes three separate rows, six inches apart.

WHITE GRUBS. One of the most distructive enemies of strawberry plants, is the

white grub, the offspring of the June bug.

The destructive pests work under ground and eat all the roots off the plant and then go to another and continue their work of destruction.

There is no way of destroying them with poison, as they can not be reached.

If your ground is infested with the white grub, do not set strawberry plants in it, for to do so would be merely expending your time and money and getting no reward in the shape of big, juicy, berries, unless you can find a way to destroy them.

You say your garden is infested with the white grubs, and yet you are determined to have a strawberry patch. You wonder if there is not some way to free the ground of most of the pests so that the damage done by those left will not be extensive.

There is one way to rid your patch of most of the white grubs, but it requires a great deal of labor.

The white grubs were introduced into your garden with that old manure you placed on it some time ago. The June bug prefers an

old manure heap as the best place it can find to deposit its eggs and breed its young.

In the fall you dig up the ground, you intend to set strawberry plants in the following spring.

The proper way to dig is to sink the shovel or spade into the ground as far as the depth of the blade and as straight down as you can conveniently. Then use the handle as a lever to break the ground, raise the dirt about a foot and let it fall as you turn the blade of the shovel over.

The dirt falls several inches and the fall causes it to break into fine pieces, and that is what you principally dig for; to make the soil loose and mellow.

Watch carefully when the dirt scatters, and if there is a white grub in it you will see it and of course kill it.

In digging, leave an open space in front. Do not fill up the hole just made by dropping the dirt back into it. When you have dug a row, there will be a sort of ditch in front of you and that you will fill with dirt from the next digging. It leaves a place to push in

the leaves, etc., which lies on the ground.

If you have any hens, turn them into the garden and they will get some of the grubs that escaped you. The frosts, that will soon come after the digging, will also help you to lesson the number of your enemies.

Give the patch another digging in the spring and watch every shovel full of dirt as it falls to the ground for any white grub that escaped the former search.

After the plants are well grown, you may notice one that does not have an healthy appearance, and if you take hold of the foliage and pull slightly, you will raise the plant from the ground. Look at it and you will find the roots have been all eaten off. Dig down in the ground, where the plant was, and you will find a big white grub. Kill it, or it will travel to another plant and continue the work of destruction of your pet plants.

PLANT ENEMIES. Rust and blight are also enemies of the strawberry plant. The first symptoms of the disease are small brown spots on the leaves. The plants can be safely protected from blight by spraying with

the bordeaux mixture. It should be applied before the plants are infested with blight, as it does not cure but merely prevents.

Spraying with the bordeaux covers the leaves with a thin coating of chemicals and thus prevents blight. The best is known as the 4-4-40, and consists of four pounds of copper sulfate, four pounds of lime, and 40 gallons of water.

The curling up of the leaves indicates an attack of mildew. Lack of moisture will also cause the leaves to curl.

The leaf roller is an insect that rolls the leaves about it so as to make a shelter for it to hatch its offspring. It can be prevented by spraying with kerosene mixture, if it is done before the leaves are curled.

One of the best cures for blight and other diseases, is to remove the old leaves, after the fruiting season is over, and burn them.

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SPRAYING MIXTURES.

Leaf chewing insects can be kept off the

strawberry plants by a spraying mixture of paris green or arsenate of lead.

Arsenate of lead is the best, as it is not so liable to burn the foliage. To prepare it for the plants, take two and a half pounds of arsenate of lead and dissolve it in three gallons of hot water; stir until it assumes a creamy appearance and then add sufficient water to make 50 gallons. Smaller amounts can be made by using less arsenate of lead.

To make the paris green mixture, take eight ounces of paris green and two pounds of lump lime. Now add two gallons of hot water. Keep stirring the mixture to prevent burning, and when cool, add sufficient water to make 40 gallons.

Bordeaux mixture is made by putting four pounds of blue vitriol in a coarse sack and emersing it in a barrel in which there are 20 gallons of water. The sack is suspended in the barrel so that the bottom of the sack will just set in the water. Then pour three gallons of hot water over four pounds of lump lime. Stir to prevent burning, and when thoroughly slacked, add enough water

to make twenty gallons. When cool, mix with the blue vitriol, by pouring the two mixtures into a third barrel at the same time.

The bordeaux mixture is not a cure, but a preventive. It covers the leaves so that they are copper plated, and thus prevents blight from damaging the leaves.

You must not spray your strawberry plants when they are in bloom or in fruit. Poison is a dangerous article to put on blossoms and fruit. Spray before the blossoms come.

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ROOTS and PLANTS.

Your labor among the strawberry plants, so far, has taught you that there must be both a good root system and a good foliage. Both are necessary to make a perfect plant that is capable of producing a big crop of juicy berries.

The intensive cultivation and rich fertilization of the ground, has put the soil into a first class condition for the roots to thrive, and caused nature's chemical agents to take

vigorous action in making proper plant food for the plants, and the ground is so mellow that the roots can easily force their way into it. You have watched the foliage very closely and sprayed them when necessary, and the result is strong and healthy plants.

The way the roots and foliage are dependent on each other can be learned from the following description of the way each performs its allotted and necessary task:

A healthy plant must have vigorous and healthy roots, and the roots have various necessary tasks to perform. They act as guys or anchors to prevent the plant from falling to the ground, or being blown away by the winds. They pump up water from the ground and give the plant all the moisture it requires, if such is within reach of the little rootlets. They collect the right kind of food out of the earth and convey it to the plant for its support.

It is therefore necessary that the roots be in good working condition to do their work properly. The plant can not get along without water and ground food, and it depends

to a great extent upon the roots doing that absolutely necessary work.

It must be evident to you that, in order to have the roots able to properly supply the plant with food and water, their surroundings must be all right.

The soil must have sufficient moisture; it must have plenty of plant food, and that food must be in shape so that the plant can digest it and thrive; it must have a soil that is firm enough to hold the roots so they can anchor the plant, and the soil must be mellow enough to permit the little roots to easily spread through it.

That condition you have attained by digging and cultivating the land to make it mellow; by putting on plenty of barnyard manure, and getting it well mixed with the ground; by loosening the ground sufficient to permit plenty of air to enter and set the chemical agents of nature to work to make the raw manure into available plant food; by rolling the ground, when necessary; by making a dust mulch, so as to prevent capilliary attraction from wasting your supply

of water. The conditions you made are just right for the little roots to spread about the ground and do their assigned work properly.

A plant, to be thrifty, must also have a good and healthy foliage. If the leaves are withered with rust or other leaf diseases, or are badly mutiliated by chewing insects, they are not able to do their allotted work, and the result is a stunted or dead plant.

Both roots and leaves must be in good condition to make a healthy and thriving plant. They work in conjunction in the following manner:

The roots spread all around the plant under the ground. Their number is large, and the parts that collect the required plant food and moisture, are at the ends of the roots.

Now, if the barn yard manure, you put in the ground, is lumped in piles, it is of very little use to the plants, for in its original shape it is not available for the little rootlets to feed upon. If it is available and is not well scattered, only a few roots could feed upon it, while the many others would

starve, resulting in the plant being insufficiently fed. It is therefore absolutely necessary that the manure and fertilizer must be well mixed with the soil, so that all the roots can reach it.

When well mixed with the soil the manure is soon rotted and the chemical agents of nature then changes the unavailable fertilizers into available food.

Mr. Kellogg, who was a great authority on strawberry culture, said that raw manure was poison to the strawberry roots.

If you were to come home wearied and feeling that a dainty article of food would tend to make the world look brighter, and when you had sat down to supper and the cook would set before you a big dish of dry flour, do you think you could enjoy it? You could not eat it, for it would not be in available shape for a human being. But let the cook take that flour and mix it with some water, butter, salt and other ingredients, and then roll the dough into the proper shape and put it into a hot oven and let the heat perform its chemical operation of changing

its composition, and then let the cook place in it a lot of fine, juicy strawberries, with plenty of sugar, and then the flour would be in an available shape---that of a delicious strawberry short cake. How you would enjoy it.

It is the same with the raw fertilizer. The plant can not feed upon it and thrive until it has changed its form and become available.

That teaches you how necessary it is that the soil must be well tilled, well watered, and have plenty of plant food well mixed with the soil, and also have sufficient heat and air to set the chemical agents of nature to work.

The water, mixed with dissolved plant food, is pumped up by the roots to the leaves and that shows very plainly to you that the plant food has to be in perfect condition, so that the water in the soil can dissolve it. It also shows plainly the necessity of having sufficient water to do the work.

On the under side of the leaves there are hundreds of minute holes, known as pores.

They serve as breathing places and emit all the water sent up by the roots that is not needed by the plants.

Experts, who have made a study of the plants, state that the amount of water pumped up by a plant, during its life time, will weigh from 300 to 500 times the weight of the plant when dry, and that a strawberry contains 97 per cent of water.

It shows the reason why it is absolutely necessary to preserve the water supply by dust mulching,

The leaves have the power of drawing carbonic acid gas from the atmosphere. That gas is composed of carbon and oxygen. The two gasses are then separated and the oxygen released and sent back into the atmosphere, while the carbon unites with the water and plant food, that was pumped up by the roots, and forms into starch. The starch is then changed into sugar and carried throughout the plant, and again becomes starch and feeds the plant.

Heat and light are therefore necessary to enable the plant to do the work just describ-

ed, and it is therefore very evident that the ground should have sufficient heat and the leaves should have plenty of sunlight, otherwise they will not be able to perform their work properly.

It is necessary, therefore, that the strawberry plants should not be close together, so as to exclude the sun light from a large part of the leaves, in addition to the fact that the roots must have sufficient feeding ground in order to obtain sufficient nurishment.

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IMPORTANT RULES.

You must impress on your mind so strongly, that you will not forget, the following rules, if you desire to have success in growing big juicy, strawberries and plenty of them:

1. You must have good, healthy plants, produced by a mother that has not born fruit and from which the buds have been picked.

2. Your ground must be well cultivated, so that it is mellow and well aired.

3. The ground must have plenty of air, to cause the chemical agents of nature to work vigorously, but it must not be so loose so as to let capilliary attraction waste the stored up water.

4. There must be plenty of barnyard manure in the ground, and it must be well mixed with the soil, so it will decay easily and be in reach of all the little rootlets.

5. The plants must be trimmed and set in the ground so the crown is just above the surface.

6. The buds must be removed from the new plants, so all the strength of the plant will be used in the building up of foliage and roots.

7. A dust mulch must be made by cultivating with a cultivator or rake, so as to preserve the water supply and to prevent loss of water by evaporation.

8. Only four runners must be allowed to each mother plant, set in double hedge row, and all the other runners cut off.

9. The ground must be covered with straw, both to act as a mulch, to keep down

the weeds, and to keep the strawberries clear of dirt.

10. After the fruit has all been picked off the plants, the tops must be cut off and burned or removed from the patch.

11. The ground must be kept clear of weeds, because they use up the plant food, pump up the water and shade the strawberry plants.

12. After mowing off the old strawberry leaves, the ground, between the rows, must be loosened, to make it easy for the new roots to force their way through, and the crowns must be covered with dirt to the depth of about an inch, so that new roots can shoot out. The plants must also have a straw blanket for a winter covering.

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FIELD CULTURE.

The growing of strawberries, on a large scale, by the acre, is the same as for the garden patch, with some exceptions.

The rows are placed four feet apart and the plants are set in the rows 20 inches from

each other. Horse cultivation will be needed, as it could not be done profitably with a wheel hoe or hand hoe.

The rows are made wider to allow a horse cultivator to be used.

Of course a person can not enrich acres of strawberries the same as can be done with a small garden patch, for the reason that sufficient stable manure can not always be obtained.

But whether on a large scale or small one, the ground must be well cultivated, good plants used, weeds kept down, straw mulching spread on the ground, and the soil surface kept loose, so as to prevent a waste of moisture by needless evaporation.

Some plants, that thrive on a soil that has considerable clay in it, would not be a success on a sandy soil, the Gandy for instance.

Some bi-sectials have an abundance of polen, while other bi-sectials are very deficient. In experimenting with new kinds of strawberry plants, you must keep these facts in mind.

The catalogues of reputable growers of

strawberry plants, will give you all the information you need, in regard to fruit, size, color of berry, kind of soil, polen supply, and many other things you will find necessary to know, if your ideal is to be achieved.

If you should sell any berries, give your customers good, honest measure, and do not put a lot of inferior berries in the bottom of the boxes, and cap off with large and fine fruit. If you promise a customer a quart of first class berries, fulfill your promise. It pays to be honest.

After you have set out all your strawberry plants, you should drive a stake at the commencement of each row and paint the name of the plants on it. You will find it very convenient the next season in designating where the different kinds of plants, you set out, are located. The memory is sometimes confusing and gives you wrong information in regard to the kind of strawberry plants in the various rows. A glance at the sign post, at the head of each row, tells you, without delay or mistake, what kind is in that row.

Do not put strawberries in a tight box or pail, unless they are for immediate use.

If the berries are left all night in such receptacles, in a warm close room, they would be somewhat musty in the morning.

If you want to keep strawberries a day or two, place them in baskets, through which the air can pass, and set them in a cool place where the air is fresh.

To get the full benefit of the strawberry, it should be eaten the same day it is picked.

During a dry season it may be necessary to water the plants, especially at the time they are bearing fruit, because a plant with 30 or 50 berries on it needs plenty of water.

One good way to supply the moisture is to dig a little trench in the middle of the rows and run the water from the higher part. It will then soak through the ground to the strawberry plant roots and carry plant food with it.

For the little garden patch use a watering can, without the sprinkler, and pour the water on the mulching in the middle of the rows.